

Here's the 10-second version of everything you need to know about debt:

Debt Type	Revolver	Term Loan A	Term Loan B	Senior Notes	Subordinated Notes	Mezzanine
Interest Rate:	Lowest	Low	Higher	Higher	Higher	Highest
Floating / Fixed?	Floating			Fixed		
Cash Pay?	Yes					Cash / PIK
Tenor:	3-5 years	4-6 years	4-8 years	7-10 years	8-10 years	8-12 years
Amortization:	None	Straight Line	Minimal	Bullet		
Prepayment?	Yes			No		
Investors:	Conservative Banks			HF's, Merchant Banks, Mezzanine Funds		
Seniority	Senior Secured			Senior Unsecured	Senior Subordinated	Equity
Secured?	Yes			Sometimes	No	
Call Protection?	No	Sometimes		Yes		
Covenants:	Maintenance			Incurrence		

**Interest Rate:** 4.00%? 5.25%? L + 400? 15.75%? Different types of debt have different interest rates. Revolvers have the lowest rates, while Mezzanine Debt has the highest. Remember that if you see “L + 400” that really means “LIBOR + 4%” – so if LIBOR is 3.00% currently, then your interest rate is 7.00% for the time being.

When you're calculating Interest Expense in an LBO model, **most of the time you average the beginning and ending balances for each type of debt.** However, that does create a circular reference in the model – so another option is to simply use the beginning balance instead.

**Floating / Fixed:** Is the interest rate fixed at 8% or 10% or 15% forever? Or is it linked to LIBOR (e.g. L + 400)? If interest rates are falling, debt investors prefer fixed rates, but if they're rising, they prefer floating rates.

**Cash Pay:** Do you pay the interest expense in cash, or does it accrue to the principal?

Let's say you have \$100 million of debt with a 15% fixed interest rate. If it's “cash pay” then you pay \$15 million in interest expense each year in cold, hard cash. If it's PIK – Payment in Kind – then that \$15 million accrues to the \$100 million and there's no cash interest expense. So in year 1, the debt balance goes up to \$115 million, then \$130 million, then \$145 million and so on.

This sounds good in theory if the company doesn't have the cash flow to afford interest expense – but in practice it's very risky because you can get a huge balance at the end that the company also can't repay.



In years past some forms of debt used to have “PIK Toggles” that let the company “flip” on and off whether or not the interest would be paid in cash – but post-credit-crunch you don’t see this anymore.

**Tenor:** A fancy word for “how long will this debt last.”

**Amortization:** How much of the principal does the company have to repay each year? Or is everything simply due at the end of the loan’s lifespan?

“Bullet Maturity” refers to the latter – when the entire loan matures at a specific date in the future.

“Straight Line Amortization” is when the principal must be repaid in equal installments until the loan fully matures. So if it lasts for 5 years and 20% must be repaid each year, that’s straight line amortization.

“Minimal Amortization” means that *less* than the entire principal will have been repaid by the end of the loan’s lifespan. So maybe the loan lasts for 5 years, but only 5% of the principal is due each year.

**Prepayment:** Can you repay the entire principal – or even just portions of the principal – before the loan itself matures?

Investors like the answer to be “no” since they get more interest payments, but companies like prepayment because it lets them reduce their interest expense.

**Investors:** Who’s going to invest in this debt? Are we talking about conservative banks, or ultra-aggressive hedge funds that make speculative investments all the time? Or is it someone in the middle?

**Seniority:** If the company goes bankrupt, who has first claim to its assets? Revolver and Term Loan investors have the highest priority claim, and it gets progressively lower as you move down to Equity.

Seniority also determines the order of repayment for the debt – assuming that prepayment is allowed, the company will repay debt with a higher seniority first.

**Secured:** Is the debt backed by collateral from the company? If it is, then in a bankruptcy the debt investors can claim whatever assets were used as collateral and then use the proceeds to repay any outstanding debt.

**Call Protection:** Is the company prohibited from “calling back” – paying off or redeeming – the security for a certain period? This is beneficial for investors because they are guaranteed more interest payments.

**Covenants:** Does the company need to maintain Debt / EBITDA or EBITDA / Interest Expense levels below or above a certain number? Those are “maintenance covenants.” Or is it prohibited from taking on additional debt, selling assets, merging or acquiring other companies? Those are “incurrence covenants” and they are all related to one-time events.



## Revolver

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Think of the revolver as a “credit card” – the company uses it when it needs to borrow extra money in the short-term to fund its obligations and its cash flow is not sufficient. Just like a credit card, a revolver:

- Has a limit on how much can be drawn at once.
- Can be repaid at any time.
- Has no “amortization period” – but the company needs to “renew it” or get a new revolver after a certain period (usually 3-5 years).
- Has interest payments that are all paid in cash and are based on the average of the beginning and ending balances.

**Revolver Draw** =  $\text{MAX}(0, \text{Net Cash Flow Available to Repay Debt} - \text{Mandatory Debt Repayment Total})$

For the optional repayment, usually you assume that the entire revolver balance is repaid – if possible – or that the maximum possible amount based on the company’s available cash flows is repaid.

## Term Loan A

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Term Loans are the “bread and butter” of most LBO deals, and you almost always see them assuming that the company is using Bank Debt (Revolver and Term Loans) rather than High-Yield Debt (everything else).

Similar to a mortgage – or even better, a college loan – Term Loans:

- Have a fixed tenor (usually 4-8 years, so shorter than mortgages or college loans).
- Have floating interest rates, with interest expense paid in cash.
- Have some type of amortization, even if it’s minimal (e.g. 5% per year for 5 years).

Term Loan A is “less risky” than Term Loan B, which means:

- The interest rate is lower.
- The entire loan is amortized over its lifespan.
- It’s outstanding for a shorter term – 4-6 years vs. 4-8 years.

“Less risky” companies and those with healthy cash flows use Term Loans for financing or LBO purposes. It’s problematic to have huge amounts of debt and principal repayment required if your cash flow can’t support it.

You could also have “Term Loan C” or other types of Term Loans, but in 99% of cases you just see the A and B varieties. Other types would also have slight differences in interest rates and amortization.

**Mandatory Repayment Formula:** You multiply the original balance by the % that is owed each year.



**Optional Repayment Formula:** First, look at (Previous Term Loan Balance – Mandatory Debt Repayment Total). Now look at (Net Cash Flow Available to Repay Debt – Mandatory Debt Repayment Total – All Your Optional Debt Repayments So Far). Assume that you pay off whichever amount is less – but if it's negative, assume \$0.

## Term Loan B

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Term Loan B is closer to High-Yield Debt, because less of the principal is amortized each year and because the interest expense is higher. Back in the “LBO boom years” of 2005-2006 it was popular for companies to take out Term Loan B loans rather than Term Loan A, so that they could reduce the principal repayment required and use more cash flow for interest payments on High-Yield Debt instead.

The **mandatory repayment** and **optional repayment formulas** are the same as for Term Loan B.

Note that you usually assume that **any extra cash flow is used to pay off Term Loan A before paying off Term Loan B**. So your “Optional Debt Repayments So Far” for Term Loan B would include whatever you've paid on the Revolver and whatever you've paid off of Term Loan A.

## Senior Notes

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Senior Notes are closer to mortgages given to people with questionable credit histories – they're still safer than truly speculative investing, but they're more risky than Revolver and Term Loan debt.

- They have higher, fixed interest rates but all the interest is still paid in cash.
- They last longer (7-10 years) and no prepayment is allowed; everything matures at the end.
- They have incurrence covenants rather than maintenance covenants.

Companies use Senior Notes when they want to avoid repaying debt principal each year, and don't mind the higher interest expense they'll get. Senior Notes are a “compromise” between Term Loans and more risky Subordinated Notes and Mezzanine Debt.

The formulas involving Senior Notes in an LBO model are very, very simple:

**Interest Expense:** Multiply the interest rate by the average balance, or by the beginning balance.

**Mandatory Repayment:** \$0

**Optional Repayment:** \$0

## Subordinated Notes

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Subordinated Notes move even further into risky territory. You can think of these more like “sub-prime mortgages,” though they are still not quite *that* risky.



The key features of Subordinated Notes are very similar to Senior Notes:

- Interest Rates are even higher, they're still fixed, and they're still (usually) paid in cash.
- They last even longer (8-10 years) and no prepayment is allowed; everything matures at the end.
- They have incurrence covenants rather than maintenance covenants.

So what's the actual difference between Subordinated Notes and Senior Notes? Not much.

In most models they're treated almost exactly the same, only with slightly different numbers for interest and the year of maturity.

## **Mezzanine Debt**

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Mezzanine is the most risky and most diverse form of debt financing. Pretty much all kinds of debt outside the categories mentioned here fall under "Mezzanine Debt":

- Preferred Stock
- PIK Notes
- Convertible Debt
- Convertible Preferred Stock

And the list goes on. The key features:

- Interest Rates are the highest here, they're fixed, and they can be paid either in cash or via PIK – which means interest accrues to the principal rather than being paid in cash.
- They last the longest (8-12 years), everything matures at the end, and no prepayment is allowed.
- They have incurrence covenants rather than maintenance covenants.

Unlike every other type of debt we've looked at, **Mezzanine Debt often carries with it an option to get an equity stake in the company.**

With convertible debt, this is obvious: it converts into shares if the company's effective sale price per share is over the conversion price. But often preferred stock and PIK notes will have warrants attached, or the investors will just get a percentage of equity in the company.

Mezzanine financing is used when the company can't support any additional Term Loans / Senior Notes / Subordinated Notes, or when it's a risky transaction to begin with and the PE firm can only attract more aggressive investors.

The Interest Expense and Mandatory / Optional Repayment formulas are simple and exactly the same as what we had for Senior Notes and Subordinated Notes.



However, you need to treat PIK interest expense differently. Here's how you do that:

- PIK interest **should still appear on the Income Statement**.
- But you need to **add back PIK interest on the Cash Flow Statement** because it's a non-cash expense.
- You also need to **increment any PIK debt balances by the PIK interest payment each year** and make sure this is properly reflected on the Balance Sheet.

With PIK debt, your interest expense should be **increasing** each year because the principal is increasing.

## Covenants

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One final topic to touch on briefly: **covenants**. These are “agreements” that the company makes which allow debt investors to monitor their performance and reduce risk.

Bank Debt (Revolver, Term Loans) comes with **maintenance covenants** and High-Yield Debt (Senior Notes, Subordinated Notes, Mezzanine Debt) has **incurrence covenants**.

### Example Maintenance Covenants

Maintenance covenants are related either to **leverage ratios** – totally indebtedness divided by another metric like EBITDA – or to **coverage ratios** – EBITDA or FCF divided by interest expense.

- **Leverage Ratios:**
  - Total Debt / EBITDA cannot exceed 3.0 x
  - Senior Debt / EBITDA cannot exceed 2.0 x
  - (Total Cash Payable Debt + Capitalized Leases) / EBITDAR cannot exceed 4.0 x
- **Coverage Ratios:**
  - EBITDA / Interest Expense cannot fall below 5.0 x
  - EBITDA / Cash Interest Expense cannot fall below 3.0 x
  - (EBITDA – CapEx) / Interest Expense cannot fall below 2.0 x

Debt investors put these in place to be reasonably certain that the company won't suddenly default, or be unable to meet its interest expense or principal repayment obligations.

In LBO models, often you track maintenance covenants by including a “Credit Statistics” or “Credit Summary” at the top of the model which includes ratios like Total Debt / EBITDA and EBITDA / Interest Expense calculated for each year. If you want to get really fancy, you can then link these to the covenants and highlight in red any cells where you violate the covenants (using conditional formatting).

### Example Incurrence Covenants

These are all related to **one-time events** rather than the financial performance of the company:



## Types of Debt & Debt Lingo – Quick Reference

<http://breakingintowallstreet.com>

- Company cannot take on more than \$2 billion of total debt.
- Proceeds from any asset sales must be earmarked to repay debt.
- Company cannot make acquisitions of over \$200 million in size.
- Company cannot spend more than \$100 million on CapEx each year.

Remember, High-Yield Debt does not amortize and so the company is responsible for paying everything off at the end. That means that debt investors are very concerned over huge outlays of cash for purposes other than paying off debt – which is why incurrence covenants are used for this type of debt.